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(54) **OBSERVER FOR SIMULATION TEST AND VERIFICATION**

(57) Systems and methods validate the operation of a component of an executable model without inadvertently altering the behavior of the component. The model may be partitioned into a design space and a verification space. The component may be placed in the design space, while an observer for validating the component may be placed in the verification space, and linked to the component. During execution of the model, input or output values for the component may be computed and buffered. Execution of the observer may follow execution of the component. The input or output values may be read out of the buffer, and utilized during execution of validation functionality defined for the observer. Model compilation operations that may inadvertently alter the behavior of the component, such as back propagation of attributes, are blocked between the observer and the component.

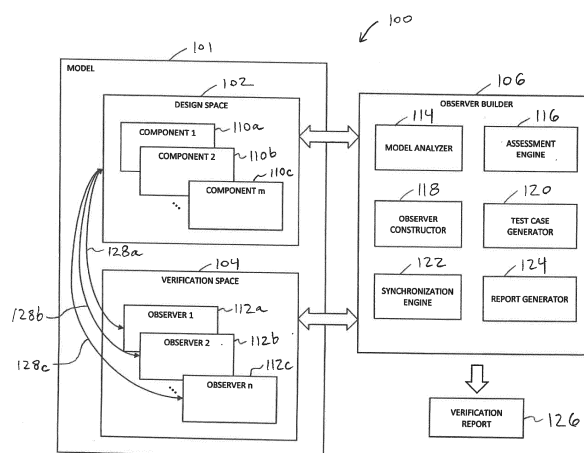


FIG. 1



PARTIAL EUROPEAN SEARCH REPORT

Application Number

under Rule 62a and/or 63 of the European Patent Convention.
This report shall be considered, for the purposes of
subsequent proceedings, as the European search report

EP 19 17 7656

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	Florian Wagner: "Modellbasierte Entwicklung und Verikation einer modularen Antriebsplattform mit MATLAB/Simulink", 16 February 2017 (2017-02-16), XP055664094, Retrieved from the Internet: URL:https://www.hochschule-bochum.de/fileadmin/public/Die-B0_Fachbereiche/fb_e/Institute und Labore/Antriebstechnik/Abschlussarbeiten/MA_Wagner.pdf [retrieved on 2020-01-31] * page 6, paragraph 2-4 * * page 7, paragraph 3; figure 2.2 * * page 60, paragraph 1-3 * * part 6.6 * * the whole document *	1-15	INV. G06F17/50 G06F11/36
X	US 2006/129371 A1 (OROFINO DONALD P II [US] ET AL) 15 June 2006 (2006-06-15) * paragraphs [0001], [0057], [0060]; claims 1,2,9 * * the whole document *	1	TECHNICAL FIELDS SEARCHED (IPC) G06F
INCOMPLETE SEARCH The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC so that only a partial search (R.62a, 63) has been carried out. Claims searched completely : Claims searched incompletely : Claims not searched : Reason for the limitation of the search: see sheet C			
Place of search		Date of completion of the search	Examiner
Munich		3 February 2020	Dapp, Wolfgang
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**INCOMPLETE SEARCH
SHEET C**

Application Number

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Claim(s) completely searchable:
1-6, 8-11, 13-15

Claim(s) searched incompletely:
7, 12

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see separate sheet

03-02-2020

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2006129371 A1	15-06-2006	EP 1831783 A2	12-09-2007
		US 2006129371 A1	15-06-2006
		US 2009012757 A1	08-01-2009
		WO 2006066037 A2	22-06-2006

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82